“EPIDEMIOLOGY OF THE ADULT CLIENT ACCESSING THE SPEECH AND LANGUAGE THERAPY SERVICES DURING INPATIENT STROKE REHABILITATION UNIT FROM A SPECIALIZED HOSPITAL (2023-2025)”

By

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A Research presented to the
Bachelor of Science in Speech & Language Therapy
Bangladesh Health Professions Institute (BHPI)
(*The academic institute of CRP*)
University of Dhaka

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[January, 2026]

APPROVAL

We the under signed certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled- **"Epidemiology of the Adult Client Accessing the Speech and Language Therapy Services during Inpatient Stroke Rehabilitation Unit from a Specialized Hospital (2023-2025)"**

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DECLARATION

The research study "Epidemiology of the Adult Client Accessing the Speech and Language Therapy Services during Inpatient Stroke Rehabilitation Unit from a Specialized Hospital (2023-2025)" is my initial project that is conducted under the guidance of Nahid Parvez, Assistant Professor at BHPI of Bangladesh Health. This is to say that the study is not harmful to the participants and it was not presented to earn any degree or qualification This research was carried out based on ethical principles of the Institutional Review Board (IRB) of BHPI. It is my responsibility to take care of any errors or inaccuracies.

Signature & Date

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Dedicated to…….

My respected supervisor, my beloved parents, my friends

and all of my well-wishers

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List of Acronyms

AOS	Apraxia of Speech
ASHA	American Speech and Language Association
BHPI	Bangladesh Health Professions Institute
CRP	Centre for the Rehabilitation of the Paralysed
CVA	Cerebrovascular Accident
IRB	Institutional Review Board
LSH	Left Side Hemiplegia
MDT	Multidisciplinary Team
NCD	Non-Communicable Disease
NOMS	National Outcome Measurement System
OT	Occupational Therapist
PT	Physiotherapist
RSH	Right Side Hemiplegia
SLT	Speech and Language Therapist
SPSS	Statistical Package for Social Sciences

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ABSTRACT

Speech and Language Therapy (SLT) is an important multidisciplinary intervention in the stroke inpatient rehabilitation unit. Stroke causes communication, cognition, swallowing, and voice impairments, which may reduce the functional independence and quality of life. The best way to recover is through early and intensive SLT intervention. In this study, the researcher would seek to identify the adult client who received the Speech and Language Therapy Services during inpatient stroke rehabilitation unit from CRP (2023-2025).

Through the quantitative study design, cross sectional retrospective descriptive survey was the appropriate tool to apply in this study, given the purpose and objective. Sampling was done by the purposive method and the sample size was 615. The patient previous file was used to gather data in the month of January 2023 to October 2025 and analyzed through the application of descriptive statistical analysis method. Problems with speech and language difficulties are more common among male than female in this study and the age with most commonly occurring is indicating between 46 to 55 years. Most of the individuals 61.6% had Right Side Hemiplegia and most of the people had the onset of illness 8-30 days before. Those with the most of the participants in terms of educational level included SSC with a percentage of 25.7 and occupation status 25.7 was Homemaker. Dysarthria ē dysphagia, however, is most common than any other mixed form of difficulties.

To assess the effects of the speech and language treatment in stroke inpatient and examine the variation of the results, the predetermined outcome of the data set may be used. The awareness of the functions of SLTs within the interdisciplinary team should be increased to promote the quality of life of the patients.

Keywords: *Speech and Language Therapy, Inpatient Stroke Rehabilitation Unit, Adult client, Specialized hospital.*

CHAPTER 1 INTRODUCTION

1.1 Introduction

Stroke or cerebrovascular accident refers to a vascular complication which is brought about by rupture or obstruction of blood vessels that supply the brain with symptoms that take more than 24 hours or it may eventually result to death of only a vascular nature. It is a fast and usually overwhelming neurological disorder, which typically leaves its victims threatened with death or disability. Stroke is a disorder that significantly increases hospitalization and increases the chances of inpatient death. (Abdu & Seyoum, 2022). Stroke may lead to disability, such as physical disability or speech, language and swallowing problems that must be addressed as soon as admission happens as a result of a multi-disciplinary rehabilitation team within the acute environment. (Kaylor, 2022).

Prevalence of stroke at 16 years and above is around 12.9 in urban and rural area of approximately 12.91% respectively, but rises with age, so that the ratio of infarction to hemorrhage is 2.91 in community. There has been no sufficient epidemiological research on stroke incidence. A large multicenter hospital determined that 72 % had ischemic stroke. (Venketasubramanian & Mannan, 2021). Over the last few decades, there has been massive development on the epidemiology of stroke whereby emerging data indicate changing trends in the occurrence, prevalence, and risk factors of stroke. stroke burden is not evenly spread among the population groups, which demonstrates the ongoing discrepancies. They are influenced by age, sex, ethnicity, socioeconomic status, geographic location to access the healthcare. (Bereda, 2025).

The third medical cause of mortality in Bangladesh is stroke. The WHO health statistics of 2011 estimated that the number of deaths as a result of stroke was about 82,039 representing 8.57% of the total number of deaths. The age and sex-standardised mortality rates in Bangladesh due to stroke is 54.8 per 100,000 persons. The lost disability-adjusted life years (DALYs) are 888.1 per 100,000 as a result of stroke. (Aziz et al., 2025). The socio-economic status of nearly 70 % population cannot afford them visiting the therapist following the costly investigation and life-saving therapy following the stroke episode. The solvent and educated category of patients may be the only ones to attend the therapy. This

is why majority of the patients who are receiving post stroke therapy are lost prior to reaching the therapist. (Salam, 2022).

CRP is the largest rehabilitation hospital in Bangladesh. It offers highly detailed post-stroke rehabilitation care based on a Multidisciplinary Team (MDT) approach. The MDT team consists of the following members: physician, physiotherapist, occupational therapist, speech and language therapist, rehabilitation nurse and the caregiver of a patient. (Hasan et al., 2022). There are a total of 19 staff and interns employed here (7 Physiotherapists, 7 Occupational therapists, 3 Speech and language therapist and 1 In charge and 1 support staff). (CRP, 2023). The primary goal of this rehabilitation is to minimize the impact of brain damage as a result of stroke with the assistance of therapeutic interventions that are based on research. SLT as a rehabilitation profession in Bangladesh started treating patients as early as the year 2004. (Afrin et al., 2024).

The speech and language therapists (SLTs) can also play a part in assisting the assessment and diagnosis of neurological conditions with the specialist assessment of motor speech disorders, language impairments, swallowing disorders, voice difficulties and cognitive communication disorders. (Barnett et al., 2018). the socio-economic state of nearly 70% of the population does not enable them to visit the therapist due to the high-cost investigation and lifesaving therapy following the stroke episode. The solvent and education of the patients may only attend the therapy. It is on this basis that most of the patients that have undergone post stroke therapy are lost prior to reaching the therapist. (Salam, 2022). The services of SLT in Bangladesh started just 15 years ago. They usually are not available or accessible to those in need due to social, geographic, economical, historical and political blocks. (Alam et al., 2022). The percentage of the population between 50-69 years will rise to 17.2 percent (14.5 million /84.1 million) in urban Bangladesh. (Adeniji et al., 2023).

Stroke rehabilitation is a part of a complex stroke treatment. Disparities in access to stroke rehabilitation may also contribute to the disability gap and cause disproportionate implications of patients who are underinsured, those who live in rural settings, as well as those who belong to underrepresented races and ethnicities. (Ifejika et al., 2025).

Aphasia has been stated to occur in a third of the patients who suffered stroke and two-thirds of the patients who suffered right hemiplegia as a result of stroke. The condition

causes a breakdown of communication, reduced social activity, depression, low employment opportunity, extreme disability, and deterioration of quality of life. (Koyuncu et al., 2016). Aphasias have various definitions; however, the most commonly agreed neurologic and/or neuropsychological definition is that aphasia is a loss or deficiency of verbal communication, which is caused by the malfunction of the brain. It appears in the form of impairment of virtually all verbal skills, e.g., abnormal verbal expression, problems with understanding spoken or written language, repeated use, naming, reading and writing. classification of aphasias based on the level of fluency, understanding and abilities of naming it appears to be most appropriate. (Sinanović et al., 2011).

Dysarthria is a motor speech disorder that is mainly characterized by the impaired articulation and speech production, as well as speech organs movements impairment. Dysarthria normally exhibits itself in the form of slowness, imprecision, and incoordination of the speech muscles. It can impair every element of speech production such as respiration, phonation, resonance, articulation, and prosody. (Bajagić & Vuković, 2025). In a survey conducted on the provision of speech-language therapy to individuals with post-stroke dysarthria in the UK, the dysarthria occurs in 52 per cent of stroke survivors during the acute stroke period. A significant portion of dysarthria (more than 20 up to 25%) is post-stroke dysarthria. (Lin et al., 2025).

Apraxia of speech (AOS) is a motor disease of speech that is defined by motor speech planning and/or programming. (Dang et al., 2021). Additional frequency data of AOS can be obtained based on the National Data Report of the National Outcomes Measurement System (NOMS), a voluntary data collection initiative of ASHA. This source reports over

30,000 adult outpatients and nearly 17,000 adult inpatients of various populations who used the services of the speech language pathologists. 23.6% with aphasia and 5.4% with apraxia is given in the outpatients and 13.4% with aphasia and 3.0% with apraxia in the inpatients. Suppose that the term apraxia is used in the reports to mean AOS and further, suppose that nearly all individuals with AOS also suffered aphasia because AOS without aphasia is not common. (Ziegler et al., 2022).

Stroke also impacts the cerebral hemispheres of the major swallowing projections resulting into dysphagia. Such an asymmetry of bilaterality could be the reason that a number of

stroke patients experience dysphagia. (Song et al., 2024). Dysphagia is present in stroke hospitalized patients up to 50%. At seven days, up to 27% are still at risk of aspiration and up to 8% have problems with their swallow at six months after the stroke and 1.7% continue to require tube feeding. (Rahman et al., 2018). Not only dysphagia predetermines aspiration, lung infection, dehydration, distortion of electrolytes, malnutrition, and other issues but also acts as an independent factor of the death of stroke patients. The timely detection of dysphagia, proper forecasting of the possibility of restoring the swallowing function of patients, and the optimal distribution of medical resources. (Jin et al., 2025).

Dementia and poststroke cognitive impairment are significant cause of morbidity and mortality following a stroke in most parts of the world. It happens as an outcome of ischemic stroke, intracerebral hemorrhage, or subarachnoid hemorrhage. The over 70% of survivors of a stroke have cognitive deficits, which depend on the type of stroke, definition, and time of measurement and are linked to disability, dependency, and morbidity; hence, a significant burden to patients, their caregivers, and health care systems. (Rost et al., 2022) It is a common name of the dissimilar pathological processes, nevertheless, irrespective of the underlying etiology, stroke survivors and their carers always rank problems of memory and thinking as their top priority. (Quinn et al., 2021).

1.2 Significance of the study

The most prevalent issue in our country that causes disability/death is stroke. Rehabilitation service centers and inadequate studies on such programs are very rare in Bangladesh. One of the facilities is Center for the rehabilitation of the Paralysed (CRP) which assists in their inpatient rehabilitation combined with a multidisciplinary team that comprises of speech and language therapist (SLT), occupational therapist (OT), physiotherapist (PT), neurologist, doctor, nurse and other professionals. Rehabilitation of adult inpatient requires the services of Speech and Language Therapists (SLTs). Services of speech and language therapy (SLT) are becoming increasingly popular in healthcare delivery system both in the urban and rural setting. In Bangladesh, healthcare infrastructures are still under evolution and SLTs provide key and vital rehabilitative services.

The purpose of the study will be to determine the demographics of clients (age, gender, education, occupation, medical diagnosis and particular speech and language difficulties). The current study is essential in filling this gap in knowledge using the need of SLT service (equity in urban and rural healthcare) in a specialized inpatient hospital such as CRP. The professionals will also benefit this research as they can determine the kind of Speech and language problems adult patients have and they can gather more information, feel more confident in working with high caseloads. The researchers will be aware of the kind of stroke patients that utilize the program and the number of people who are admitted at inpatient stroke rehabilitation unit in CRP annually. This research can help to refine stroke patient protocols because hospital resources can determine the most prevalent issues of stroke patients. This research will give data on the occurrence of certain disorders, gender, or the influence of socioeconomic factors. This will also enhance caregiver burden and will act as a motivating and inspirational factor in early seeking of the services of the Speech and Language Therapy at inpatient stroke rehabilitation.

1.3 General and Specific Objectives

1.4 Objectives:

The objectives are given below

1.4.1 General Objective

- To explore the epidemiology of adult clients accessing Speech and Language Therapy services during inpatient stroke rehabilitation unit in a specialized hospital (2023-2025).

1.4.2 Specific Objectives

- To describe the socio-demographic characteristics of adult stroke inpatients receiving Speech and Language Therapy services.
- To find out the proportion and types of speech and language difficulties among adult stroke inpatients in the last three years.
- To find out the association between socio-demographic characteristics and speech & language difficulties in adult stroke inpatients.
- To find out the association between socio-demographic characteristics and diagnosis of adult stroke inpatients.

1.5 Literature Review

Stroke has remained one of the most significant public health issues since it has been known to affect over 10 million people annually globally. About a quarter of the patients succumb to death in the first month of stroke onset, and half of the survivors of stroke become helpless individuals who remain dependent on other people in their daily lives. (Obaid et al., 2020). The American Heart Association reported that nearly 800,000 individuals in the US have a stroke annually that translates to one stroke every 40 seconds. Aphasia is a complicating factor to post-stroke recovery and is linked to the longer length of stay and complications during acute stroke admission, a higher mortality, morbidity, and cost expenditures. (Gerstenecker & Lazar, 2019).

Bangladesh has recently become one of the lower-middle-income nations and anticipates moving up the list to the middle-income country by the year 2026. Among the NCDs, it is clear that stroke is a huge killer and most common causes disabilities in the world. As epidemiological transition has occurred, the leading cause of mortality has changed slowly to non-communicable diseases (NCDs) in the past three decades since the first infectious and parasitic diseases. (Mondal et al., 2022). There is an opportunity to increase the rate of stroke as the population of the older people grows. In case of not undergoing rehabilitation services as stipulated by WHO there are a high probability of multiplying the number of people and losing the number of productive people. So, one should be aware of the barrier of rehabilitation services in Bangladesh perspective so that government and non-government organization can pay attention to enhance the situation. (Hossain et al., 2024).

Significant nonmodifiable risk factor is the age; beyond 55 years, stroke risk increases twofold every ten years. The differences between sexes have also been noted, though, men are more prone to it, but this difference disappears after the age of 70. The other known non-modifiable factors are environmental factors, socio-economic status, the genetic orientation, and ethnicity. (Rahman et al., 2025). In the African region (not one-therapist per the entire population) speech language pathologists as specialists in the management of common impairment that are rated with neurological disorders such as swallowing, speech, language, and cognition are not found in some of the low-income countries such as the United States or Australia that have >300 per 1 million. Rehabilitation demands all

over the world are larger than the number of services available and available practitioners; where they exist, the level of rehabilitation is considerably lower than evidence-based practice. (Bettger et al., 2019).

A common effect of stroke, that may result in poor psychological well-being, poor health outcomes and social isolation as opposed to no communication impairment, is communication impairment (either aphasia where language is impaired or dysarthria where speech intelligibility is impaired). (Mitchell et al., 2020). The impairment, activity and participation of the stroke are known to have formidable documented effects on the individual. At this degree of impairment, individuals with a right CVA tend to lack awareness and insight and have problems with visual and spatial abilities. Contrast individuals with a left CVA are more susceptible to diseases like aphasia and apraxia. (Kottorp et al., 2012). The effective treatment of aphasia should be speech and language therapy (SLT), as it is effective in the improvement of language and functional communication. (Zumbansen et al., 2022).

Dysarthria is a motor speech disorder, which occurs when the neurological system is damaged, leading to the inability to move the lips, tongue, lower jaw, velum, vocal cords, and diaphragm, and move these muscles clumsily. A survey of the speech-language therapy provision in the UK to those with post-stroke dysarthria showed that the prevalence of dysarthria in the acute stroke period was approximately 50% and then the prevalence of residual impairment ranged down to 27% in the next 6 months after stroke thus has been largely overlooked despite the severity of its impact. (Lin et al., 2025)

The Apraxia of speech was reported to be the most common communication disorder at the Mayo Clinic Speech Pathology practice (4.7% of the patients with motor speech disorders). A right sided hemiparesis and non-fluent (Broca's) aphasia are usually the result of a stroke in the left middle cerebral artery that damages the left inferior frontal cortex and precentral cortex, and can also result in the speech apraxia. Although the majority of the apraxia research was based on patients with LH lesions, there is a growing literature that indicates that both hemispheres might have lesions that cause apraxia. After LH and RH stroke, the rates of prevalence of apraxia are approx. 3050 and 820, respectively. (Latarnik et al., 2022). It has been typically characterized as a disability in the intermediate level of

speech production; it is neither considered to be a linguistic impairment (aphasia), or a speech motor execution problem, it is characterized as a deficiency in speech motor movement programming and organization. (Hybbinette et al., 2021).

The poststroke dementia and cognitive impairment is frequent. A study in 2021 found that approximately 10 to 30 percent of stroke survivors had dementia. Those factors have lately led to an increase in prevalence of post-stroke cognitive impairment due to the aging of populations and as a result of reduced post-stroke mortality. (Hua et al., 2023). Worldwide, it is estimated that 35.6 million individuals have dementia that is going to increase to 65.7 million by 2030 and 115.4 million by 2050. Dementia is a global problem, more than half (58) of the deaths due to this health issue are experienced in the low and middle-income nations, by 2050, it is likely that more than 70 % of the deaths attributed to this disease will have been experienced in the country. Alzheimer and other dementia related deaths in Bangladesh according to the latest figures took 14,993 or 2.09 % of all deaths in the country as per the data published in the year 2020. (Imran et al., 2024).

Dysphonia is voice-related abnormalities, which include hoarseness or pitch quality. Dysphonia is a frequent complication of an ischemic stroke and it is present in about 20 % of patients. (Kim et al., 2023). It has been reported regularly that age and education have an impact on cognitive performance. Brazilian research revealed that language and cognitive performance of healthy illiterate subjects were worst compared to literate subjects. Aphasia (56%), dysarthria (33%), and apraxia of speech (19%), were the most common ones in a Brazilian rehabilitation service using acquired communication disorders. (Cera et al., 2019).

Dysphagia was considered to be newly developed inability to swallow at the time of hospital admission. In a standard clinical procedure, the patients were all assessed on the possible presence of swallowing disorders on admission. A clinical swallowing examination was performed by the speech and language therapists as a way of diagnosing dysphagia. (Karisik et al., 2024). The Ministry of Health (2021) indicated stroke as the eighth priority of Oman research on health. Dysphagia stroke patients have been demonstrated to have a higher risk of developing aspiration and/or aspiration pneumonia

up to 11 times more than without swallowing patients. It can be concluded, therefore, that post stroke dysphagia is an independent predictor of a long-term recovery, a poor quality of life, and adverse clinical outcome. (Al-Mamari et al., 2024). Oropharyngeal Dysphagia has serious medical outcomes including malnutrition, dehydration, pneumonia, and even the necessity of enteral nutrition, which further make it more institutionalized; the longer length of hospital stay, the higher hospital re-hospitalization, and possibility of discharge to rehabilitation services and nursing facilities rather than home. (Rivelsrud et al., 2022)

1.6 Operational Definition

1.6.1 Speech and Language Therapy Service

Addressing hearing, voice, swallowing, receptive and expressive language, articulation, oral structure, and linguistic formulation, Speech and Language Therapy (SLT) is aimed at treating the disorders and disabilities of people in the language and communication area. (Robles-Bykbaev et al., 2015).

1.6.2 Inpatient Stroke Rehabilitation Unit

An inpatient stroke rehabilitation unit is a dedicated hospital ward where a team of coordinated nurses, doctors and therapists offer structured care to the stroke patients, making them rehabilitate and recover by offering special resources and expertise in management of stroke. (Langhorne, 2014).

1.6.3 Adult Client

An adult client is a person that is 18 years old or above and gets medical services within a healthcare setting.

1.6.4 Specialized Hospital

Specialized Hospital is a healthcare facility that is specialized in evaluating, diagnosing, treating and managing patients with unique medical conditions, procedures or groups of patients, including cardiac, orthopedic, surgical, psychiatric, pediatric, or rehabilitative needs.

CHAPTER 2 METHODOLOGY

The researcher is interested to find out in this study, the epidemiology of the adult client accessing the Speech & Language Therapy services during inpatient Stroke Rehabilitation Unit from a specialized hospital. Based on the research, investigator identified the ratio of speech and language difficulties and demographic information in adult client.

2.1 Study Design

The quantitative study of the cross-sectional retrospective survey applied in the current study. The purpose of the research was to determine the "Epidemiology of the Adult clients are accessing the Speech and Language Therapy Service during inpatient Stroke Rehabilitation Unit from a Specialized Hospital (2023-2025)". The study was choosen by the investigator; by considering the study's goals and objectives, the investigator chose the most appropriate study design, which is a cross-sectional design. It was a descriptive study. A survey needs to describe the characteristics of a population. The researcher gathered previously stored information on the files as retrospective survey design applied in the research. The investigator intentions in this work are to establish the features of the socio demographic data and the proportion between speech and language disorders of the adult customer and to determine the outcome of the association between them.

2.2 Sample Selection

2.2.1 Study Setting

The research was done in inpatient Stroke Rehabilitation Unit of the Speech and Language Therapy Department of Center for the Rehabilitation of the Paralysed (CRP), Savar.

2.2.2 Study Population

To begin with, speech and language therapy service was being offered to adult stroke inpatient with speech and language problems during the month of January 2023 to October 2025 period of time during inpatient Stroke Rehabilitation Unit at Center of the Rehabilitation of the Paralysed (CRP), Savar. It was conducted through a purposive sampling technique. The study is a retrospective one, and the researcher collected information based on the patient records retrieved in January 2023-Octobor 2025. (Campbell et al., 2020) state that the reason behind purposive sampling is the fact that it is more appropriate to match the sample with the objectives and aims of the research, thereby enhancing the rigour of the study and data and results credibility.

2.2.4 Sample Size

The researchers employed purposive sampling method in order to assemble their data. The data gathered in the present research was based on past files among the adult clients using the services of speech and language therapy in CRP, Savar, Dhaka, between January 2023 and October 2025. Inpatient stroke rehabilitation requires high incidence of sample to strong descriptive statistics, increase dependability of findings, explain fluctuation in patient features, and enhance the generalization of results in diverse populations and treatment environments. (Hong et al., 2019). In descriptive cross-sectional studies, the sample size can be small because resources are limited or the population size may have certain constraints whereas bigger sizes have a greater statistical power and generalize to the population and the studies can make more accurate estimations of population parameters and can minimize sampling error. (Cole, 2009). The aim of the study is to acquire knowledge regarding adult clients that evaluated the services of Speech and Language Therapy in inpatient stroke rehabilitation unit and since this is a retrospective study, it was a large sample size. The data collected were by the investigators over the 3 years period and the sample size was 615.

2.2.5 Inclusion Criteria

- During January 2023 to October 2025, adult stroke clients received speech and language therapy services from inpatient stroke rehabilitation unit.
- An adult stroke client completed an assessment from January 2023 to October 2025 to identify speech, language and eating difficulties.
- Age is ≥ 16 years.

2.2.6 Exclusion Criteria

- Patients who did not take speech and language therapy services from January 2023 to October 2025 from inpatient stroke rehabilitation unit.
- Incomplete assessment form.
- Age is < 16 years.

2.3 Data Collection

2.3.1 Data Collection Instrument

The information was gathered through stroke patient completed speech and language therapy assessment form of adult patients. The assessment form will be applied to the adult stroke client in the department of Speech and Language Therapy, CRP, Savar, Dhaka.

2.3.2 Data Collection Procedure

In order to gather information, initially, the researcher sought the permission of Head of Speech and Language Therapy department in CRP. The researcher was not able to gather information directly on adult clients. It is also referred to as documentary analysis. Data was gathered by the researcher among former patients that had speech and language therapy in inpatient stroke rehabilitation department of the Centre for the Rehabilitation of the Paralyzed (CRP), Savar, Dhaka in the period January 2023 to October 2025.

2.4 Informed Consent

The researcher had permission to proceed with the study in writing with the head of the Speech and Language Therapy department and also acquired permission of the Institutional Review Board (IRB) of BHPI. Through a written document the Head of the Speech and language Therapy department has been officially informed about the aims and objectives of the study which cause no physical or mental harm to the patients. In order to maintain confidentiality, the investigator will not disclose the name, address, and personal information of the client to the other persons.

2.5 Data Analysis

Analysis of the results was done through SPSS version 26 program. The descriptive analysis of survey research is mostly employed to explain the sociodemographic characteristic of the sample, including the age, sex, education, and occupation and the frequencies of clinical or service-related variables. (Hicks, 2009)

CHAPTER 3 RESULT

3.1 Result of variables

3.1.1 Gender of the Participants

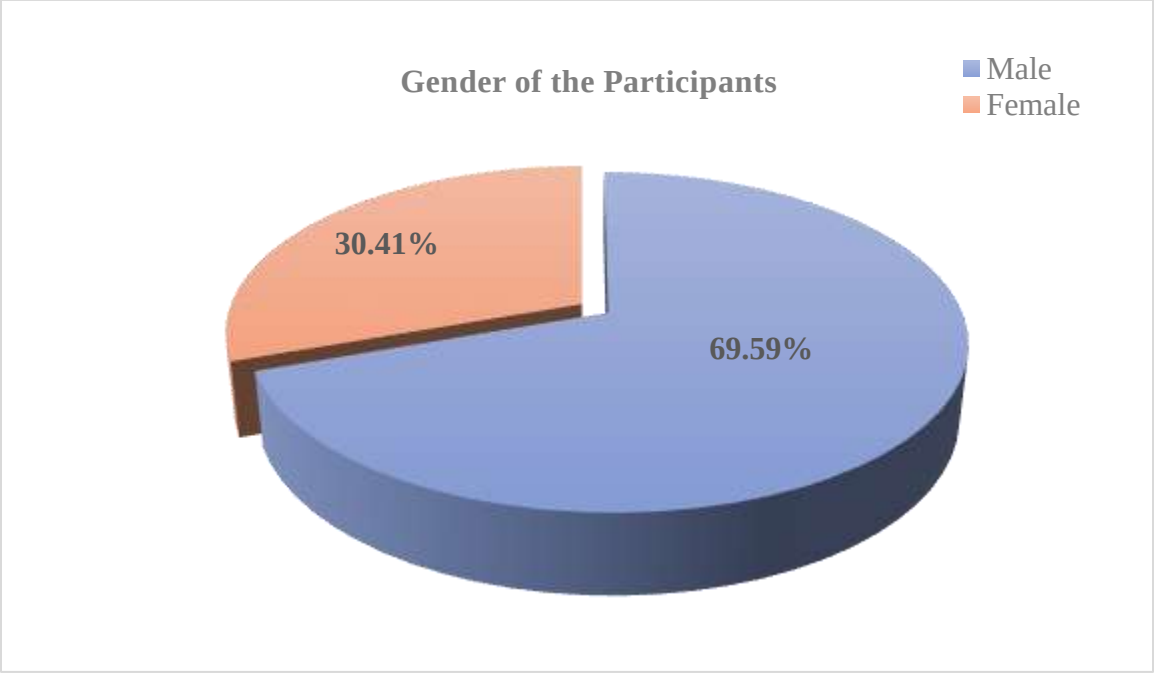


Figure 3.1.1: Gender of the Participants

The pie chart is used in this research to provide the obtained data on gender, and in this case two different gender groups were identified with the most common gender groups being male which represents 69.59% (428) and the least common gender groups being female which represents 31.5% (187).

3.1.2 Age of the Participants

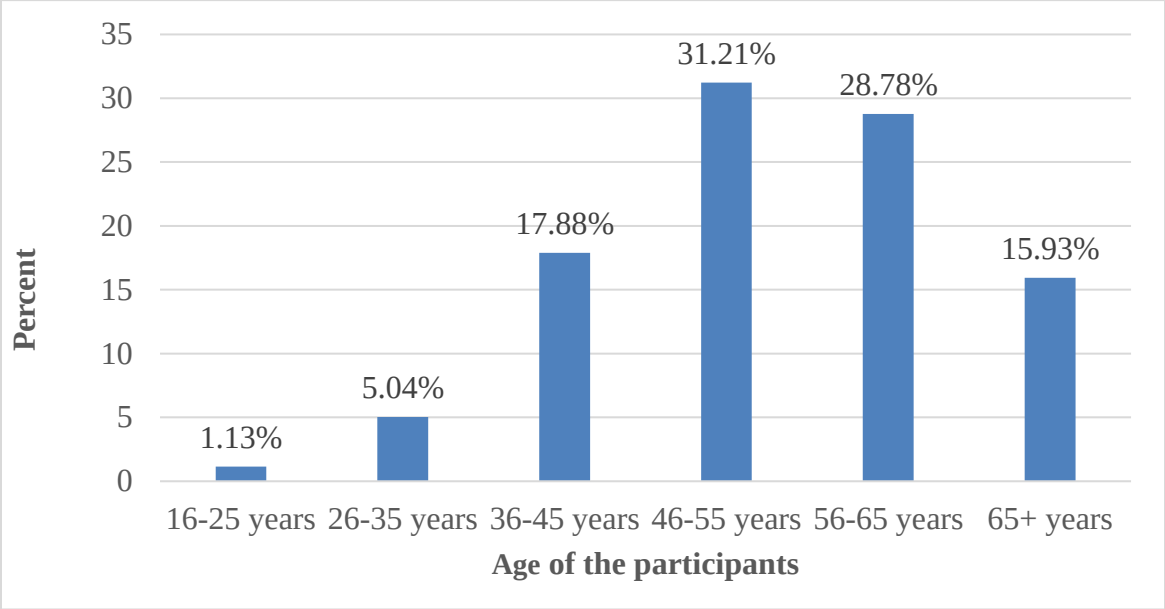


Figure 3.1.2: Age of the Participants

The graphs in this research provide the data on age that are obtained. In this case the age groups among (615) who were initiated were divided into six groups between the age of 16 to 65 years and above. The bar graphs reflects that the highest age bracket is 46-55 years that constitutes 31.21 percent (192). Other than the lowest age group comes the 16-25 years which constitutes 1.13% (7). Another age group is also 26-35 years as the other group which represents 5.04% (31), the other age group is 36-45 years which represents 17.88% (110) and another age group is 56-65 years which represents 28.8% (177), the last age group is 65+ years which represents 15.93% (98).

3.1.3 Occupational Status of the participants:

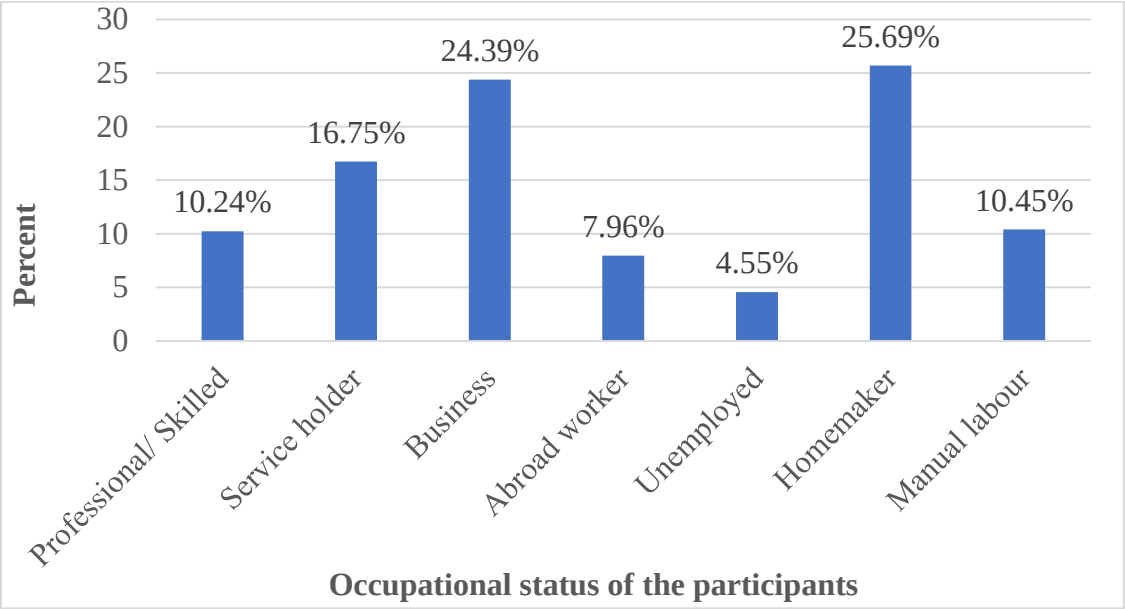


Figure 3.1.3: Occupational Status of the participants

Based on the findings, this bar chart depicts that the highest respondents were 25.69% (158) Homemaker. It was discovered that 10.24% (63) participants were Skilled/ Professional, 16.75% (103) participants were Service holder, 24.39% (150) participants were Business and 7.96% (49) participants were Abroad worker. It was also discovered that 4.55% (28) of the respondents were Unemployed and 10.45% (64) of the respondents were Manual labour. Unemployed involved Students and Retired Persons.

3.1.4 Educational Level of participants:

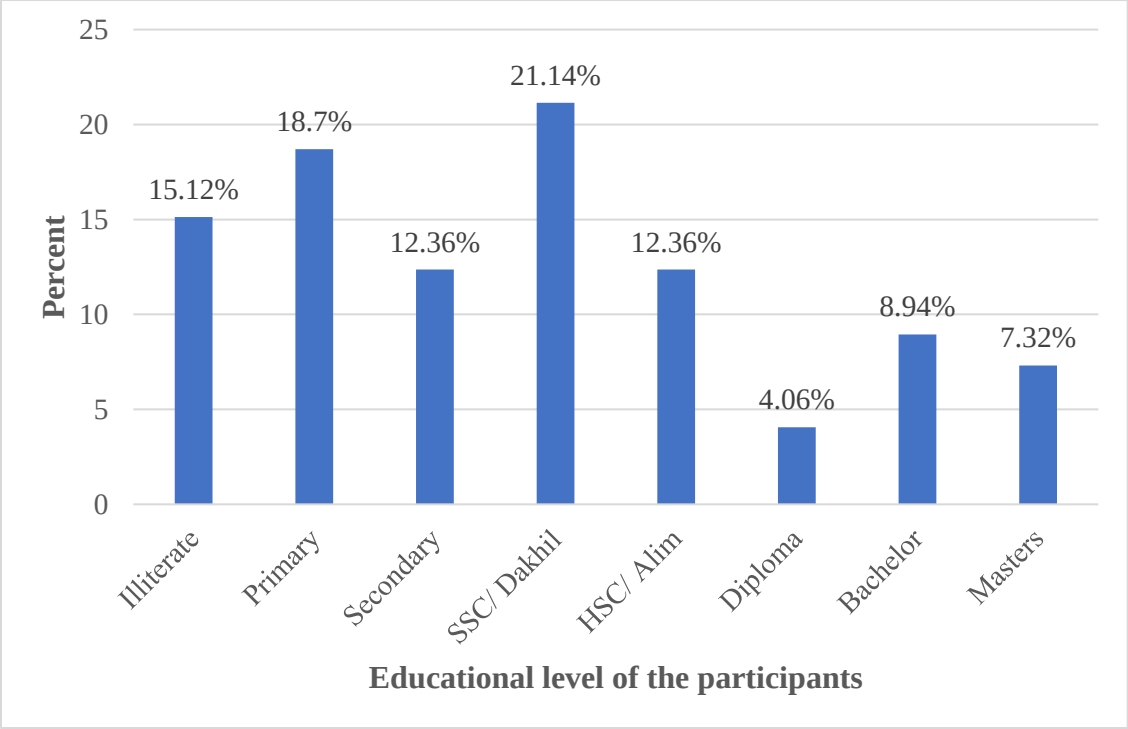


Figure 3.1.4: Educational Level of participants

We were able to see that most of the participants 21.14% (130) had passed SSC, but the lowest number of participants 4.06 % (25) had passed diploma. 15.12 % (93) Participants was illiterate 12.36% (76) participants had passed HSC/ Alim, 8.94 % (115) participants had passed Bachelors and 7.32 % (45) persons had passed Maters.

3.1.5 Onset Date of the Participants:

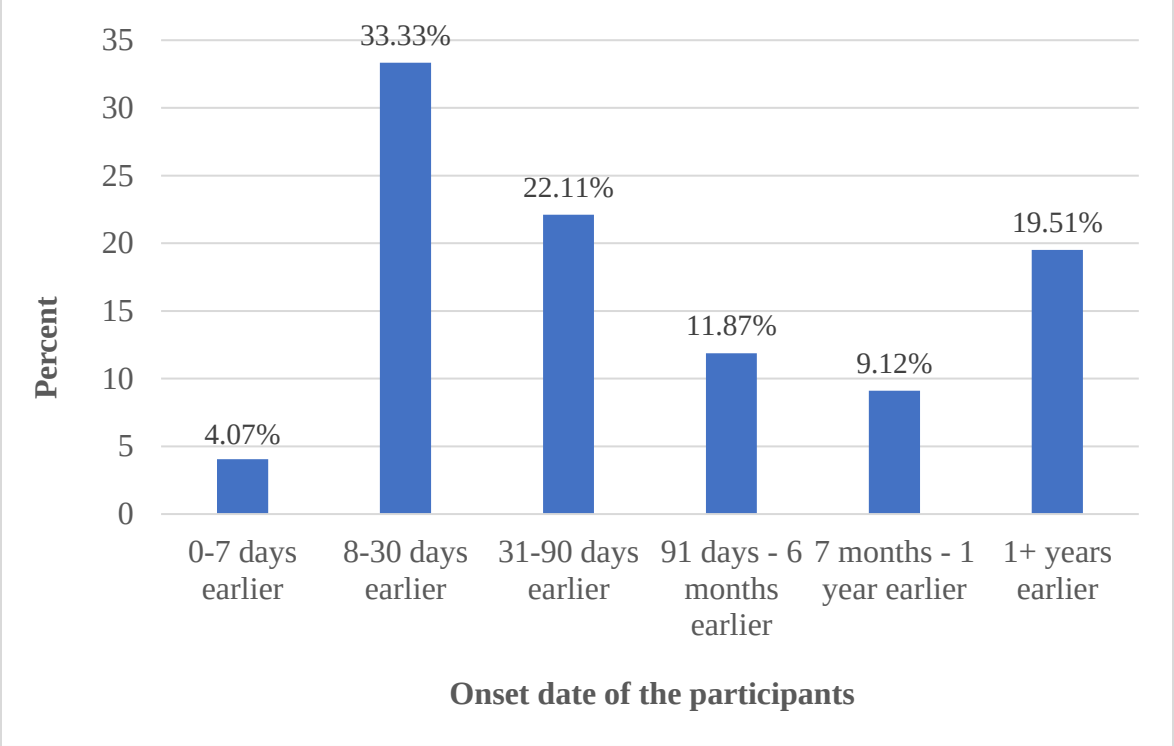


Figure 3.1.5: Onset date of the Participants

This bar chart reveals that out of 615 people, the highest number of participants of 33.33% (205) had the development of illness within the first 8-30 days earlier and lowest number of 4.07% (25) was the onset of stroke during 0-7 days earlier. As it was established 22.11% (136) of the individuals became ill 31-90 days earlier, and 11.87% (73) of the cases had an onset 91 days to 6 months earlier. The bar graph shows that 9.12% (56) of the patients had an onset of illness 7 months to 1 years before and 19.51% (120) had 1+ years earlier.

3.1.6 Medical diagnosis of the participants:

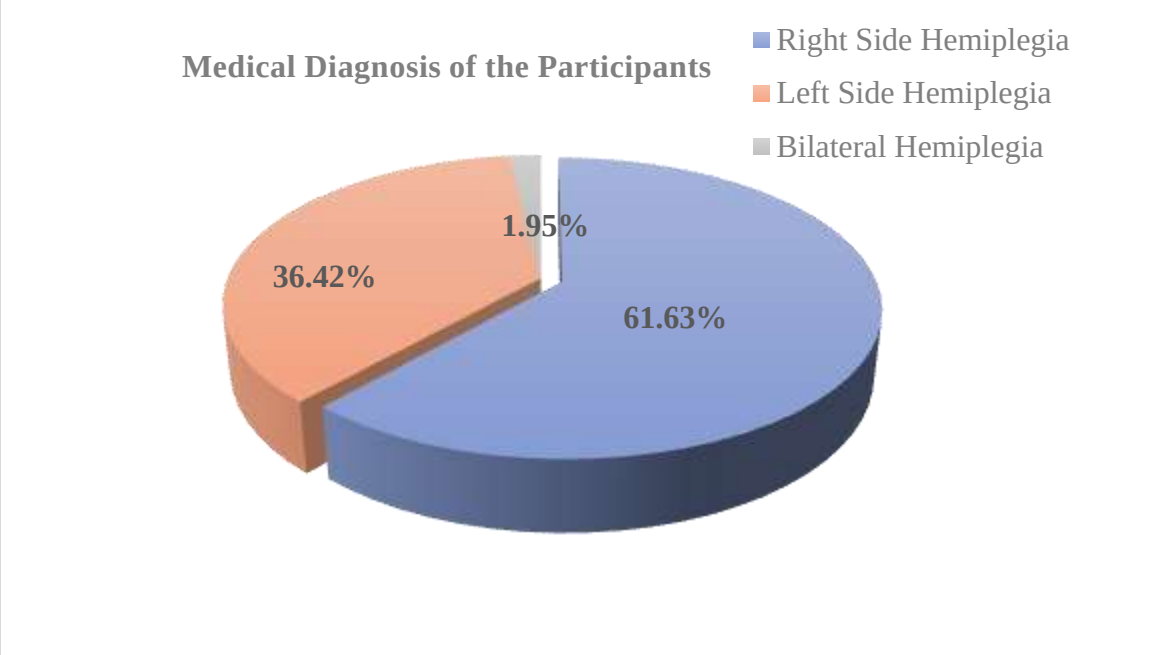


Figure 3.1.6: Medical diagnosis of the participants

According to bar chart, of 615 stroke cases, 61.63% (379) were right side hemiplegic, whereas 36.42% (224) were left side hemiplegic patients. Also, it shows that 1.95% (12) respondents suffered bilateral hemiplegia.

3.1.7 Ratio of Speech and Language Difficulties among Participants

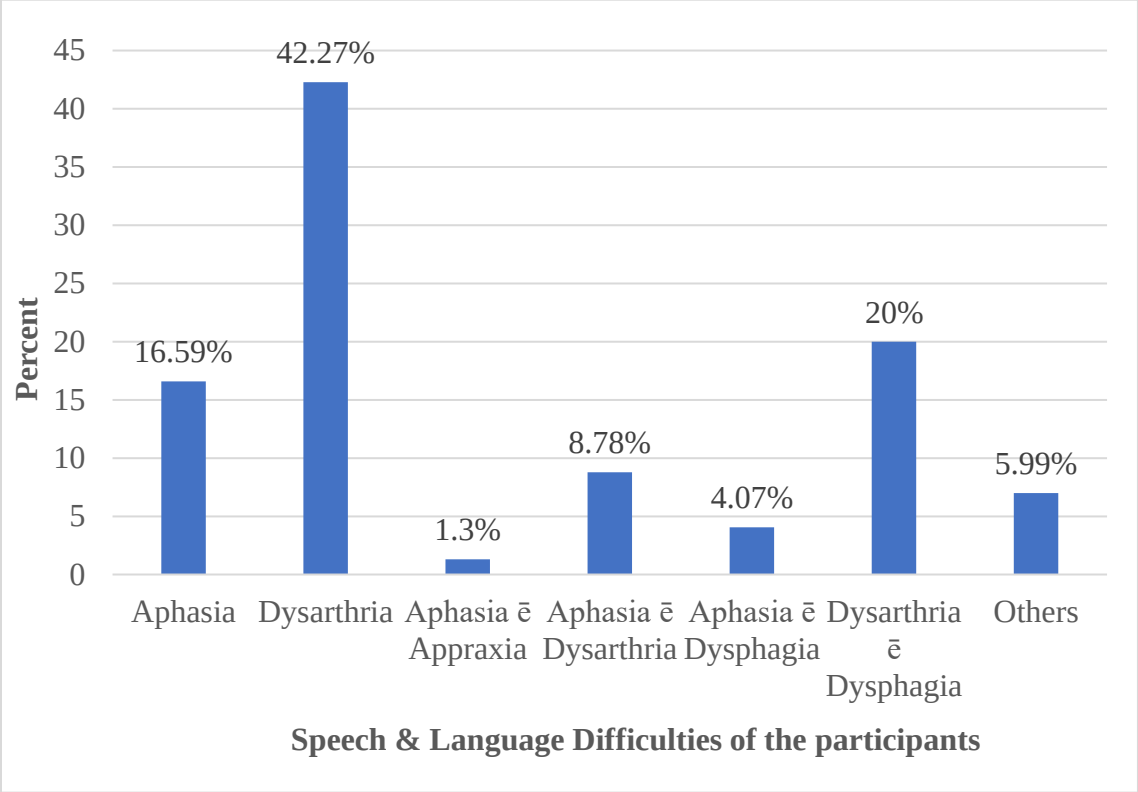


Figure 3.1.7: Ratio of Speech and Language Difficulties among Participants

Based on the data, this bar graph demonstrates that the dominant individuals 42.27% (260) were diagnosed with Dysarthria and 16.59 % (102) of SLT patients were diagnosed with Aphasia. Moreover, the bar charts also depict the fact that those people who have mixed forms of speech and language problems Aphasia ē Apraxia 1.3% (8), Aphasia ē Dysarthria 8.78% (54), Aphasia ē Dysphagia 4.07% (25) and Dysarthria ē Dysphagia 20% (123) of all the participants. In other, Cognitive Impairment, Voice Disorder, Dementia, Parkinson Disease and over two Mixed conditions were including 5.99% (43).

Table 3.2.1: Association between Gender of the Participants and Medical Diagnosis of the Participants.

		Medical Diagnosis of the participants			Total
		Right Side Hemiplegia	Left Side Hemiplegia	Bilateral Hemiplegia	
Gender of the participants	Male	267	154	7	428
	Female	112	70	5	187
Total		379	224	12	615

In this research out of the total 615 respondents, the greatest part of the respondents was male 69.6% (428) and out of them the highest number of the respondents had Right Side Hemiplegia 61.6% (379). The observed $p>0.05$. This was not a statistically significant finding. Thus, Gender of the participants and Medical Diagnosis of the Participants was not associated.

Table 3.2.2 Association between Age of the Participants and Medical Diagnosis of the Participants.

		Medical Diagnosis of the participants			Total
		Right Side Hemiplegia	Left Side Hemiplegia	Bilateral Hemiplegia	
Age of the participants	16-25 years	6	1	0	7
	26-35 years	21	10	0	31
	36-45 years	68	38	4	110
	46-55 years	125	65	2	192
	56-65 years	104	68	5	177
	65+ years	55	42	1	98
Total		379	224	12	615

The 46-55 years age category was the most frequent at 31.2% (192) out of these most of the participants were having Right Side Hemiplegia 61.6% (379). The observed $p>0.05$. The outcome was found not to be statistically significant. Thus, no association existed between Age of the Participants and Medical Diagnosis of the Participants.

Table 3.2.3 Association between Occupation status of the participants and the Medical Diagnosis of the participants.

		Medical Diagnosis of the participants			Total
		Right Side Hemiplegia	Left Side Hemiplegia	Bilateral Hemiplegia	
Occupational status of the participants	Professional/ Skilled	40	22	1	63
	Service holder	67	33	3	103
	Business	87	60	3	150
	Abroad worker	35	14	0	49
	Unemployed	19	9	0	28
	Homemaker	92	63	3	158
	Manual labour	39	23	2	64
Total		379	224	12	615

Most frequent occupation status among 615 participants were Homemaker 25.7% (158) and among them most of the participants had Right Side Hemiplegia 61.6% (379). The observed $p>0.05$. This was not a statistically significant result. Accordingly, Occupation status of the participants was not associated to the medical diagnosis of the participants.

Table 3.2.4 Association between Gender of the Participants and Speech and Language Difficulties among Adult clients.

		Gender of the participants		Total
		Male	Female	
Speech & Language Difficulties of the participants	Aphasia	67	35	102
	Dysarthria	191	69	260
	Aphasia ē Appraxia	6	2	8
	Aphasia ē Dysarthria	41	13	54
	Aphasia ē Dysphagia	19	6	25
	Dysarthria ē Dysphagia	78	45	123
	Others	26	17	43
Total		428	187	615

Most frequent gender groups of 615 participants include male that makes 69.6 (428) and of them the majority of participants had dysarthria 42.3 (260). The observed $p>0.05$. This was not a statistically significant result. Thus, Gender of the Participants and Speech and Language Difficulties among Adult clients did not have any association.

Table 3.2.5 Association between Age of the Participants and Speech and Language Difficulties among Adult Clients.

		Age of the participants						Total
		16-25 years	26-35 years	36-45 years	46-55 years	56-65 years	65+ years	
Speech & Language Difficulties of the participants	Aphasia	1	6	18	30	30	17	102
	Dysarthria	3	16	44	87	73	37	260
	Aphasia ē Appraxia	0	1	2	3	2	0	8
	Aphasia ē Dysarthria	1	3	13	10	20	7	54
	Aphasia ē Dysphagia	1	2	3	6	7	6	25
	Dysarthria ē Dysphagia	1	3	18	47	32	22	123
	Others	0	0	12	9	13	9	43
Total		7	31	110	192	177	98	615

The most common age group of 615 respondents was 46-55 years that constitutes 31.2% (192) and out of them majority of the respondents had dysarthria 42.3% (260). The observed $p>0.05$. This was not a statistically significant finding. Therefore, Age of the Participants and Speech and Language Difficulties were not associated with each other among Adult Clients.

Table 3.2.6 Association between Occupation status of the participants and Speech and Language Difficulties among adult clients.

		Speech & Language Difficulties of the participants							Total
		Aphasia	Dysarthria	Aphasia ē Appraxia	Aphasia ē Dysarthria	Aphasia ē Dysphagia	Dysarthria ē Dysphagia	Others	
Occupational status of the participants	Professional/ Skilled	7	32	0	4	2	17	1	63
	Service holder	10	45	2	9	3	24	10	103
	Business	24	67	1	17	8	23	10	150
	Abroad worker	9	19	1	3	4	9	4	49
	Unemployed	4	14	1	3	1	5	0	28
	Homemaker	32	57	1	12	5	35	16	158
	Manual labour	16	26	2	6	2	10	2	64
Total		102	260	8	54	25	123	43	615

Most frequent occupation status was homemaker 25.7% (158) of 615 participants and of them most of the participants had dysarthria 42.3% (260). The observed $p>0.05$. This was not a statistically significant result. Thus, the Occupation status of the participants was not linked with the Speech and language difficulties among adult clients.

Table 3.2.7 Association between Educational Level of the participants and the Medical Diagnosis of the participants.

		Medical Diagnosis of the participants			Total
		Right Side Hemiplegia	Left Side Hemiplegia	Bilateral Hemiplegia	
Educational level of the participants	Illiterate	60	33	0	93
	Primary	70	43	2	115
	Secondary	43	31	2	76
	SSC/ Dakhil	78	49	3	130
	HSC/ Alim	44	30	2	76
	Diploma	13	12	0	25
	Bachelor	41	11	3	55
	Masters	30	15	0	45
Total		379	224	12	615

The SSC/Dakhil which represents 21.1% (130) of 615 of its participants had the highest level of frequency and out of these 61.6% had Right Side Hemiplegia (379). The observed $p>0.05$. This was statistically insignificant. Hence, Educational Level of the participants did not have any association to the Medical Diagnosis of the participants.

Table 3.2.8 Association between Educational level of the participants and Speech and language difficulties among adult clients.

		Speech & Language Difficulties of the participants							Total
		Aphasia	Dysarthria	Aphasia ē Apraxia	Aphasia ē Dysarthria	Aphasia ē Dysphagia	Dysarthria ē Dysphagia	Others	
Educational level of the participants	Illiterate	27	29	1	9	6	16	5	93
	Primary	19	48	1	12	6	22	7	115
	Secondary	13	32	1	8	1	14	7	76
	SSC/ Dakhil	17	56	2	11	5	29	10	130
	HSC/ Alim	9	35	0	6	2	15	9	76
	Diploma	1	18	0	1	0	3	2	25
	Bachelor	10	27	2	3	3	9	1	55
	Masters	6	15	1	4	2	15	2	45
Total		102	260	8	54	25	123	43	615

The most common educational level was SSC/ Dakhil that makes 21.1 percent (130) and of them most of their participants had dysarthria 42.3 percent (260). The observed $p>0.05$. This was not statistically significant. Hence, among adult clients, there was no association between the levels of education of the participants and Speech and language difficulties.

CHAPTER 4 DISCUSSION

This research was a retrospective form of descriptive research on epidemiology of the adult client accessing the Speech and Language therapy services during inpatient stroke rehabilitation unit from a Specialized Hospital. The subjects who participated in the study were 615, CRP inpatient stroke patients. Data was collected through a demographic questionnaire by the researcher. This study aimed at determining the socio-demographic data of the participants and identifying a relationship between various variables.

Through this research, 615 participants were used, and the majority of the participants 69.6% (428) were males, and 30.4% (187) were females. Female participants are overtaken by the male participants in inpatient stroke rehabilitation unit. Abdu and Seyoum (2022) argue that men are more likely to have strokes than women in the world. Sex did not do a significant statistical adjustment to the relationship between focal symptoms and clinical diagnosis of ischemic events in a multicenter cohort, which suggests no important gender influence in stroke diagnosis through the presentation of symptoms. (Yu et al., 2019). Gender of the participants and Medical Diagnosis of the participants are statistically not significant. (X^2-0.630; df-2). (See annexure 2, table 3.2.1). Equal incidences of speech impairments (e.g., speech difficulties, facial droop) in stroke patients of both sexes, and there is no uniform finding of statistically significant differences in sex manifestations of such clinical symptoms. (Shajahan et al., 2022). Gender of the Participants and Speech and Language Difficulties among Adult client are statistically not significant (X 2 -0.230; df-6), (See annexure 2, table 3.2.2).

Patients with ages between 16-65+ were the highest with a representation of 31.2% (192) in the 46-55 years and the lowest in the 16-25 years with 1.1%. It was discovered that 5 % (31) were aged between 26-35 years, 17.9% (110) were aged between 36-45 years, 28.8 % (177) were aged between 56-65 years and 15.9 % (98) were aged 65 and above. The prevalence of stroke in adults with ages 18-44 and ages 45-64 years in the United States showed a higher increase (14.6 % and 15.7 %) between 2011-2022 respectively than in adults 65 years and older (Meyer et al., 2019). (Feigin et al., 2024).

In Indian meta-analytic Christian data, stroke patients were mostly geriatric, and so the average age is more than 50 years. (Joseph et al., 2024). No significant patient demographic differences were found between the left and right hemisphere stroke groups, such as age, which demonstrated that there was no correlation between the age and stroke laterality (or side of hemiplegia). (McCluskey et al., 2016). The association between the age of the participants and medical diagnosis of the participants is not statistically significant (X^2= 0.525; df=10). (See annexure 2, table 3.2.3).

In a large retrospective cohort study of the pattern of aphasia types in various age groups following stroke, the age group patterns of aphasia types did not significantly differ implying that age might not be directly related to speech-language outcome patterns. (Yao et al., 2015). There is no statistical significance between the age of the participants and the speech and language difficulties among adult clients. (X^2=0.630; df=30). (See annexure 2, table 3.2.4).

The result of this present research, most of the respondents 25.7% (158) were Homemaker and the least number of respondents that were 4.5% (28) respondents were Unemployed (Students and Retired persons). It was discovered that Skilled/ Professional had 10.2% (63) participants and Service holder had 16.7% (103) participants. Using a cross-sectional survey of Thailand, the proportion of stroke cases was high among the unskilled workers in comparison to other jobs. (Tipayamongkholgul et al., 2021). Occupation and medical diagnosis of the participants was not significantly associated statistically in this paper. (X^2=0.865; df=12). (See annexure 2, table 3.2.5)

Several of the large-scale studies and reviews of predictors of post-stroke aphasia specifically target neurological and demographic predictors and do not mention occupation as a predictor, which suggests the absence of an established association. (Ali et al., 2021). The asociation between the occupation and speech and language difficulties of the participants not statistically significant. (X^2=0.429; df=36). (See annexure 2, table 3.2.6).

In the available data, we have found out that the highest percentage of 21.14 % (130) were passed SSC and lowest percentage 4% (25) were passed Secondary. The percentage of those that passed HSC/ Alim was 12.4% (76), those that passed Bachelor were 8.9% (55)

and those that passed Masters stood at 7.32% (45). Educational attainment (which is commonly defined as below high school education or primary education) is positively associated with the risk of stroke and people dying, even after controlling the other variable such as income, vascular risk factors, and demographics. (Pantoja-Ruiz et al., 2024b). Regresion analysis (hierarchy) showed that gender, age, education, and post-stroke time were not the significant predictors of the severity of aphasia; instead, language variables (e.g., naming, verbal fluency) were the significant ones. (Lice et al., 2024). In this research, the relationship between education of the participants and speech and language difficulties of the participants is statistically not significant. (X^2=0.294; df=42). (See annexure 2, table 3.2.8).

Out of 615 respondents, the highest number of participants were 33.3% (205) had the progression of illness within the first 8-30 days preceding and the lowest number in 0-7 days preceding were 4% (25). It was established that 22.1% (136) of the respondents had been ill within 31-90 days before. Out of the total 615 stroke patients, 61.6% (379) patients had been diagnosed with the right sided hemiplegia, whereas, 36.42% (224) patients were diagnosed with left side hemiplegia. Also, it shows that 1.9% (12) respondents had bilateral hemiplegia. his research found out that half (42.3) of the participants 260, were diagnosed to be having Dysarthria. In a cohort of inpatients in the UK (n=88,974), 52% of stroke survivors developed dysarthria (24% dysarthria and 28% dysarthria ē aphasia) (Mitchell et al., 2020).

Dysarthria is very common in the acute process with one out of every 22-58 stroke victims having dysarthria. (Bersano et al., 2020). The results of the research showed that 16.6% (102) patients were diagnosed with Aphasia. Aphasia was between 14.3% and 24.9% among the eight states during the two years. (Ellis et al., 2017). In this Study, Aphasia ē Apraxia occurred in 1.3% (8) of all subjects. Among the inpatients of 13.4% aphasia, and 3.0% of apraxia. Suppose, that, in such reports, the term apraxia really means AOS, and further, that nearly all persons with AOS had aphasia. (Ziegler et al., 2022). Based on the findings, 4.0% (25) were diagnosed with Aphasia ē Dysphagia and 20% (123) were diagnosed with Dysarthria ē Dysphagia. The greatest co-occurrence of any two impairments was 28% has both dysphagia and dysarthria. 10% of their patients with acute

stroke had both dysarthria and aphasia. (Flowers et al., 2013). Aphasia ē Dysarthria that is represents 8.8% (54) of the total participants. This study showed that in others 5.99% (43) were diagnosed with Cognitive Impairment, Voice Disorder, Dementia, Parkinson Disease and more than two Mixed conditions such as Aphasia ē Dysarthria ē Dysphagia, Aphasia ē Dysarthria ē Cognitive Disorder were including.

Lastly but not least, majority of the participants 69.6% (428) were male, the highest age of was 31.2% (192) between 46-55 years, the highest number were 25.7% (158) Homemaker, development of illness within the first 8-30 days earlier was the maximum participants 33.3% (260) had been diagnosed with Right Side Hemiplegia, most common individuals 42.3% (260) had been diagnosed with Dysarthria. Background information and speech and language difficulties of the entire population at inpatient stroke rehabilitation are not significantly associated.

CHAPTER 5 LIMITATIONS & RECOMMENDATIONS

Limitations:

- The clinical document presented a challenge in gathering data since it was very confidential.
- The research was carried out in one unit of a Specialized Hospital, therefore, it is not possible to generalize the results to the entire population of stroke patients.
- Some of the Diagnostic categories were small and simple and therefore their ability to detect significant associations might have been constrained.

Recommendations:

- It is suggested to have several rehabilitation centers to enhance representativeness.
- Timing, intensity and length of inpatient speech and language therapy services in stroke survivors could be studied.
- Quality of life of stroke patient upon receiving SLT inpatient services can be examined.
- The use of SLT services between inpatient and outpatient can be examined.

CHAPTER 6 CONCLUSION

This is a retrospective epidemiological study on 615 adult patients who accessed Speech and Language Therapy (SLT) services during Inpatient Stroke Rehabilitation Unit at the Centre for the Rehabilitation of the Paralysed (CRP) Bangladesh in the period 2023-2025 that offers useful information in the utilization of this service. Institutional referral processes, stroke severity or immediate post stroke needs might have greater impact on the access of SLT services at CRP. Overall participants were 615 in this research. The findings show a stronger predominance of male 69.6% over females among all the participants and those who had the highest representation were between the age 46-55-year-old range 31.2%. The largest number of participants in educational level was in the SSC and occupation status which was 25.7% and Homemaker. Right Side Hemiplegia 61.6% (379) was found in most of the patients and the onset of illness as of most of the participants 33.3% were with the range of 1st 8-30 days ago. Dysarthria is a condition that is more common 42.3% than other conditions. Dysarthria ē dysphagia, however, combine more often than any other combination.

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ANNEXURE – I

Result (Chi square tests)

1.1 Association between Gender of the participants and Medical Diagnosis of the Participants.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.925[a]	2	0.630
Likelihood Ratio	0.886	2	0.642
Linear-by-Linear Association	0.578	1	0.447
N of Valid Cases	615		

Association between Gender of the participants and Medical Diagnosis of the Participants examined using chi square test. The result is statistically not significant. ($p>0.05$)

1.2 Association between Age of the Participants and Medical Diagnosis of the Participants.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.078[a]	10	0.525
Likelihood Ratio	9.839	10	0.455
Linear-by-Linear Association	2.616	1	0.106
N of Valid Cases	615		

Association between Age of the participants and Medical Diagnosis of the Participants was examined using chi square test. The result is statistically not significant. ($p>0.05$)

1.3 Association between Occupation status of the participants and the medical diagnosis of the participants.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.882[a]	12	0.865
Likelihood Ratio	8.282	12	0.763
Linear-by-Linear Association	0.369	1	0.544
N of Valid Cases	615		

Association between Occupation status of the participants and the medical diagnosis of the participants was examined using chi square test. The result is statistically not significant. ($p>0.05$)

1.4 Association between Gender of the Participants and Speech and Language Difficulties among Adult clients.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.105[a]	6	0.230
Likelihood Ratio	8.057	6	0.234
Linear-by-Linear Association	1.962	1	0.161
N of Valid Cases	615		

Association between Gender of the Participants and Speech and Language Difficulties among Adult clients was examined using chi square test. The result is statistically not significant. ($p>0.05$)

1.5 Association between Age of the Participants and Speech and Language difficulties among Adult Clients.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	26.881[a]	30	0.630
Likelihood Ratio	30.099	30	0.461
Linear-by-Linear Association	1.551	1	0.213
N of Valid Cases	615		

Association between Age of the Participants and Speech and Language Difficulties among Adult Clients was examined using chi square test. The result is statistically not significant. ($p>0.05$)

1.6 Association between Occupation status of the participants and Speech and Language Difficulties among adult clients.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	36.857[a]	36	0.429
Likelihood Ratio	39.918	36	0.300
Linear-by-Linear Association	0.682	1	0.409
N of Valid Cases	615		

Association between Occupation status of the participants and Speech and Language Difficulties among adult clients was examined using chi square test. The result is statistically not significant. ($p>0.05$)

1.7 Association between Educational Level of the participants and the Medical Diagnosis of the participants.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.654[a]	14	0.335
Likelihood Ratio	18.285	14	0.194
Linear-by-Linear Association	0.221	1	0.638
N of Valid Cases	615		

Association between Educational Level of the participants and the Medical Diagnosis of the participants was examined using chi square test. The result is statistically not significant. ($p>0.05$)

1.8 Association between Educational Level of the participants and Speech and Language Difficulties of the participants.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	46.456[a]	42	0.294
Likelihood Ratio	47.576	42	0.256
Linear-by-Linear Association	0.385	1	0.535
N of Valid Cases	615		

Association between Educational Level of the participants and Speech and Language Difficulties of the participants was examined using chi square test. The result is statistically not significant. ($p>0.05$)

ANNEXURE – II (A)

Data collection tool (English)

Serial no: _____ Date: _____ ID no: _____ Contact no: _____

Ax date: _____ Name: _____DOB/Age: _____Sex: _____

Address: _____Occupation: _____

Education level: _____Previous Medi his: _____

Medical Dx: _____SLT Dx: _____

Onset date: _____ Deficit post onset: _____

Cognitive impairment: _____ Additional information: _____

ANNEXURE – II (B)

Data collection tool (Bangla)

সিরিয়াল নম্বর: …… তারিখ:……আইডি নং: ……. মোবাইল: .....

মূল্যায়ন এর তারিখ: ..... নাম: ……. বয়স: …… লিঙ্গ: .....

ঠিকানা: …… ……. পেশা: ……...

শিক্ষাগত যোগ্যতা: …… পূর্বের রোগের তথ্য: …….

চিকিৎসা বিষয়ক রোগ নির্ণয়: .....এসএলটি রোগ নির্ণয়: .....

উপসর্গ শুরুর তারিখ: ..... ঘাটতি শুরু হওয়ার পরে: .....

জ্ঞানসম্বন্ধীয় বৈকল্য: …… অতিরিক্ত তথ্য: ……

Annexure - III

Permission letter for review and ethical approval

বাংলাদেশ হেলথ্ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)

Ref: CRP-BHPI/IRB/09/2025/1166 Date: 15.09.2025

To
Mt. Shanzida Khatun Bushra
4th Year B.Sc. in Speech & Language Therapy
Session: 2020-21, DU Reg. No: 14315, Student ID: 132000291
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal – "Epidemiology of the Adult Client Accessing the Speech and Language Therapy Services during Inpatient Stroke Rehabilitation Unit from a Specialized Hospital (2023-2025)" by ethics committee.

Dear Mt. Shanzida Khatun Bushra,
Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the principal investigator and Nahid Parvez, Assistant Professor of Speech and Language Therapy Department, BHPI as thesis supervisor. The Following documents have been reviewed and approved:

Sr. No.	Name of the Documents
1	Dissertation proposal
2	Questionnaire (English version)
3	Information sheet & consent form.

The purpose of the study is to find out epidemiology of the adult client accessing the speech and language therapy services during inpatient stroke rehabilitation unit from a specialized hospital. The study involves use of a self-made questionnaire to explore that may take 20 minutes and have no likelihood of any harm to the participants and have possibility of benefit patients in their accessing inpatient services. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 08:30 AM on May 21, 2025 (49th IRB meeting) at BHPI.

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,

Muhammad Millat Hossain
Associate Professor, Project and Course Coordinator, MRS
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ। ফোন: +৮৮ ০২ ২২৪৪৪৫৪৬৪-৫, +৮৮ ০২ ২২৪৪৪১৪০৪, মোবাইল: +৮৮ ০১৭৩০ ০৫৯৬৪৭
CRP-Chapain, Savar, Dhaka-1343, Bangladesh. Tel: +88 02 224445464-5, +88 02 224441404, Mobile: +88 01730059647
E-mail : principal-bhpi@crp-bangladesh.org, Web: bhpi.edu.bd

Permission letter for data collection

Date: 04.10.25

To

The Head

Department of Speech & Language Therapy

Centre for the Rehabilitation of the Paralysed (CRP)

CRP, Savar, Dhaka-1343, Bangladesh

Subject: **Prayer for Seeking Permission to conduct data collection.**

Ma'am,

With due respect, I state that I am a 4th year student of B.Sc. in Speech & Language Therapy Department, Session: 2020-21 at Bangladesh Health Professions Institute (BHPI), the academic institute of Centre for the Rehabilitation of the Paralysed (CRP). I am sincerely seeking your permission to conduct my research project as the partial fulfillment of the requirement for the degree of B.Sc in Speech and Language Therapy. The title of research project is "**Epidemiology of the Adult Client Accessing the Speech and Language Therapy Services during Inpatient Stroke Rehabilitation Unit from a Specialized Hospital (2023-2025)".** The purpose of the study is to find out the epidemiology of the adult client accessing the speech and language therapy services during inpatient stroke rehabilitation unit from a specialized hospital (2023-2025)".

Now I am seeking your kindness to approve me to conduct the research project and I would like to ensure that anything of my research project will not be harmful to the participants.

So, I therefore pray and hope that you would be kind enough to grant me the permission to conduct the research project.

Your obediently

Mt. Shanzida Khatun Bushra

Mt. Shanzida Khatun Bushra

4th year student of B.Sc. in Speech & Language Therapy Department

Bangladesh Health Professions Institute (BHPI)

CRP, Savar, Dhaka

Head of the Department	Comment
Tahmina Sultana Consultant & Head Department of Speech and Language Therapy Centre for the Rehabilitation of the Paralysed (CRP) CRP, Savar, Dhaka	Permitted (TS) 04/10/25 TAHMINA SULTANA Consultant & Head Speech & Language Therapy Department CRP, Savar, Dhaka

Forwarded
4/10/2025